BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Agency	:	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	:	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Estimate Cost	:	Rs.

QUALITY CONTROL REPORTS TO

Asst. Executive Engineer,
Vidyaranyapura Sub Division,
BBMP, Bangalore.

CIVIL-TECH CONSULTANTS & ENGINEERS

Building & Highway Material Testing Laboratory
NABL ACCREDITED LABORATOTY AS PER ISO / IEC – 17025:2005
No.23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar, Bangalore – 560 079.

QUALITY CONTROL REPORTS FOR

CIVIL WORKS

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CEMENT/2014-15 Date: 09.02.2015

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
*NAME OF THE WORK	:	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
*REFERENCE	:	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	06.02.2015
PERIOD OF TESTING	:	06.02.2015 to 09.02.2015

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	160 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	470 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/SAND-Gradation/2014-15 : 09.02.2015

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of Work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 06.02.2015

Date of Testing : 09.02.2015

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	97.00	90-100	90-100	90-100	95-100
2.36	80.20	60-95	75-100	85-100	95-100
1.18	61.70	30-70	55-90	75-100	90-100
600 Micron	31.90	15-34	35-59	60-79	80-100
300 Micron	14.40	5-20	8-30	12-40	15-50
150 Micron	4.60	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Civil-Tech Consultants & Engineers Bangalore

Remarks : This sample is under Zone-I specific limits.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/AGG/GR/2014-15 : 09.02.2015

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of Work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 06.02.2015

Date of Testing : 09.02.2015

Total Wt. of Aggregates in gms= **10000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	98.15	95-100	85-100
20	37.90	30-70	0-20
10	15.40	10-35	0-5
4.75	3.40	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CC Solid Block/2014-15 : 12.02.2015

TEST REPORT ON SOLID CONCRETE BLOCKS

*** Customer**	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
*** Agency**	: **Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
*** Name of the Work**	: Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	: EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Sample Received on	: 06.02.2015
Date of Testing	: 12.02.2015
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	35.28	258.9	3.24	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.12	260.3	3.25	
3	Block 3	35.26	262.3	3.28	
4	Block 4	34.18	264.1	3.30	
5	Block 5	35.20	260.5	3.26	
6	Block 6	34.69	262.1	3.28	
7	Block 7	35.16	263.2	3.29	
8	Block 8	34.25	260.8	3.26	

*Information is furnished by the Customer/Representative.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 23.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
* Name of the work	: Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	: EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
* Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 28th day
Sample Received on	: 23.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	23.02.2015	23.03.2015	8.110	356.3	15.84
2	23.02.2015	23.03.2015	8.265	372.3	16.55
3	23.02.2015	23.03.2015	8.334	382.3	16.99

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 23.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 23.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	23.02.2015	23.03.2015	8.120	350.2	15.56
2	23.02.2015	23.03.2015	8.290	372.3	16.55
3	23.02.2015	23.03.2015	8.334	382.3	16.99

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE 9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 25.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 25.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.02.2015	25.03.2015	8.112	362.5	16.11
2	25.02.2015	25.03.2015	8.260	372.3	16.55
3	25.02.2015	25.03.2015	8.375	380.2	16.90

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 25.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 25.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.02.2015	25.03.2015	8.275	350.9	15.60
2	25.02.2015	25.03.2015	8.315	370.2	16.45
3	25.02.2015	25.03.2015	8.463	379.6	16.87

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-97

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 26.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 26.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	26.02.2015	26.03.2015	8.125	352.3	15.66
2	26.02.2015	26.03.2015	8.269	375.5	16.69
3	26.02.2015	26.03.2015	8.369	380.2	16.90

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

Civil-Tech Consultants & Engineers Bangalore

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 26.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 26.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	26.02.2015	26.03.2015	8.129	365.5	16.24
2	26.02.2015	26.03.2015	8.275	376.3	16.72
3	26.02.2015	26.03.2015	8.310	382.5	17.00

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

DE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 27.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* **Customer**	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* **Agency**	: **Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
* **Name of the work**	: Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* **Reference**	: EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
* **Sample ID**	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* **Grade of Concrete**	: M_{20}
Compressive Strength as on	: 28th day
Sample Received on	: 27.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	27.02.2015	27.03.2015	8.110	478.5	21.27
2	27.02.2015	27.03.2015	8.230	492.6	21.89
3	27.02.2015	27.03.2015	8.367	508.3	22.59

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

Civil-Tech Consultants & Engineers Bangalore

VISHWANATH .C
Quality Manager

AE-09

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 27.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 27.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	27.02.2015	27.03.2015	8.195	482.5	21.44
2	27.02.2015	27.03.2015	8.215	499.3	22.19
3	27.02.2015	27.03.2015	8.375	523.1	23.25

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 28.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 28.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	28.02.2015	28.03.2015	8.117	485.6	21.58
2	28.02.2015	28.03.2015	8.255	497.3	22.10
3	28.02.2015	28.03.2015	8.379	518.3	23.04

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AEE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/S/CSR-2/758c/CUBE/2014-15 28.03.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

*** Name of the work** : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 28.03.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	28.02.2015	28.03.2015	8.112	489.7	21.76
2	28.02.2015	28.03.2015	8.290	512.3	22.77
3	28.02.2015	28.03.2015	8.334	528.6	23.49

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

Civil-Tech Consultants & Engineers Bangalore

VISHWANATH .C
Quality Manager

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S /STEEL/2014-15 12.02.2015

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	:	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	:	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Date of Test	:	12.02.2015
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm^2	Tensile strength (Ultimate stress) N/mm^2	Elongation percent gauge length		
1	10	0.62	514	557	13.20	O.K	O.K

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

****

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S /STEEL/2014-15 12.02.2015

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	:	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	:	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Date of Test	:	12.02.2015
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm^2	Tensile strength (Ultimate stress) N/mm^2	Elongation percent gauge length		
1	12	0.89	515	558	13.50	O.K	O.K

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

QUALITY CONTROL REPORTS FOR

WET MIX MACADAM(WMM)

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/WMM/Gradation/2014-15

09.03.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

Name of Work : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

Date of Testing : 09.03.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7895**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	1.9	98.1	95-100
22.4	2550	2700	34.2	65.8	60-80
11.2	1495	4195	53.1	46.9	40-60
4.75	1290	5485	69.5	30.5	25-40
2.36	935	6420	81.3	18.7	15-30
0.600	685	7105	90.0	10.0	8-22
0.075	640	7745	98.1	1.9	0-8

Civil-Tech Consultants & Engineers Bangalore

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/WMM/Gradation/2014-15

09.03.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Mr. Shivanna,**
#182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.

Name of Work : Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015

Date of Testing : 09.03.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 8695

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	185	185	2.1	97.9	95-100
22.4	2615	2800	32.2	67.8	60-80
11.2	1510	4310	49.6	50.4	40-60
4.75	1250	5560	63.9	36.1	25-40
2.36	985	6545	75.3	24.7	15-30
0.600	900	7445	85.6	14.4	8-22
0.075	900	8345	96.0	4.0	0-8

Civil-Tech Consultants & Engineers Bangalore

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-97

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/WMM/AIV/2014-15

09.03.2015

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	09.03.2015

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	301	
4	Aggregate Impact value = percent fines	20.58	20.79	
	100* (W_2/W_1)%			**20.68**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Civil-Tech Consultants & Engineers Bangalore

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/WMM/S-T/2014-15 09.03.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	09.03.2015

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **12.15%**

Elongation Index = **13.90%**

Result : Combined Flakiness & Elongation index **26.05%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

QUALITY CONTROL REPORTS FOR

SEMI DENSE BITUMINOUS CONCRETE

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No: CTCE/BBMP/W.No.09/S/CSR-2/758c/SDBC(QB)/2014-15 16.03.2015

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

*CUSTOMER	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
*NAME OF THE WORK	:	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	:	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
*SAMPLE ID	:	Bitumen
DATE OF SAMPLING	:	14.03.2015
PERIOD OF TESTING	:	14.03.2015 to 16.03.2015

The results of the tests conducted on the bitumen sample using for Semi Dense Bituminous Concrete.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	86	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	43	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	302	Min. 220

*Information is furnished by the Customer/Representative.

Civil-Tech Consultants & Engineers Bangalore

Note:

⇒ This test report shall not be reproduced except in full, without written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

VISHWANATH .C
Quality Manager

AE-9

****

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/AIV/2014-15 16.03.2015

Aggregate Impact Value

IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	16.03.2015

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.28	22.48	22.38

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/Shape_T/2014-15 16.03.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	16.03.2015

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **12.63%**

Elongation Index = **13.60%**

Result : Combined Flakiness & Elongation index **26.23%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/Stripping/2014-15 18.03.2015

Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	18.03.2015

Type of binder : 80/100
Percentage of binder used : 5.0% by wt.
Total weight of aggregate : 200 g
Total weight of binder : 10.0 g
Temperature of water-bath : 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	3.1	3.20	96.80
2	3.2		
3	3.3		

Comments:

→ Minimum allowable Aggregate retained coating for Semi Dense Bituminous Concrete is 95%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/Sp_Wa/2014-15 18.03.2015

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560
Name of the Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	18.03.2015

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2023	2026	
2	Weight of basket suspended in water	W_2 g	750	750	750	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1272	1273	1276	
4	Weight of saturated surface dry aggregate in air	W_3 g	2041	2043	2046	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	769	770	770	
6	Weight of oven dried aggregate	W_4 g	2023	2022	2026	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.631	2.626	2.631	2.629
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.694	2.700	2.701	2.698
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.89%	1.04%	0.99%	0.97%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing

****

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.09/S/SDBC/Bitumen/2014-15 18.03.2015

BITUMEN DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC : SP : 11 - 1984

CUSTOMER	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
NAME OF THE WORK	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
SAMPLE I/D	Ganesha temple road, Ward No.09.
DATE OF TESTING	18.03.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	475
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.00
7. Bitumen content in %	5.10	5.00
8. Average	**5.05**	

Civil-Tech Consultants & Engineers Bangalore

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/Bitumen/2014-15 18.03.2015

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CUSTOMER	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
NAME OF THE WORK	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
SAMPLE I/D	Ganesha temple road, Ward No.09.
DATE OF TESTING	18.03.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.36	5.34	5.34	94.66	90-100
4.75	248.96	52.47	57.81	42.19	35-51
2.36	54.32	11.45	69.26	30.74	24-39
1.18	51.26	10.80	80.06	19.94	15-30
0.3	28.79	6.07	86.13	13.87	9-19
0.075	37.98	8.00	94.13	5.87	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	33.68	7.09	7.09	92.91	90-100
4.75	259.87	54.71	61.80	38.20	35-51
2.36	56.32	11.86	73.66	26.34	24-39
1.18	42.15	8.87	82.53	17.47	15-30
0.3	25.68	5.41	87.94	12.06	9-19
0.075	30.27	6.37	94.31	5.69	3-8

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory.

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

****

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore

M/s. Civil-Tech Consultants & Engineers

23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/S/SDBC/AGG/2014-15 18.03.2015

Aggregate Gradation Test

IS : 2386 Part I

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP,
Agency	**Mr. Shivanna,** #182, 4th Main, M.S. Ramaiah Enclave, Hesaraghatta Main Road, Bangalore – 560 073.
Name of the Work	Improvements to Roads and drains in Ganesha temple Road in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/295/2014-15 Dated: 06.02.2015
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete (SDBC)
Date of Testing	18.03.2015

Total Weight of Sample: **5650** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	453	8.0	8.02	91.98	90-100	
4.75	2974	52.6	60.65	39.35	35-51	
2.36	783	13.9	74.51	25.49	24-39	
1.18	451	8.0	82.50	17.50	15-30	
0.3	386	6.8	89.33	10.67	9-19	
0.075	325	5.8	95.08	4.92	3-8	

Total Weight of Sample: **5600** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	386	6.9	6.89	93.11	90-100	
4.75	2962	52.9	59.79	40.21	35-51	
2.36	629	11.2	71.02	28.98	24-39	
1.18	434	7.8	78.77	21.23	15-30	
0.3	345	6.2	84.93	15.07	9-19	
0.075	495	8.8	93.77	6.23	3-8	

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97